

QUESTION ITU-R 60/6

Digital broadcasting at frequencies below 30 MHz

(1995-1999)

The ITU Radiocommunication Assembly,

considering

- a) that the reception quality of AM broadcasting in the LF, MF and HF bands (150 kHz to 26 MHz) suffers from:
 - limited AF bandwidth, partly due to planning constraints;
 - the disturbing effects of sky-wave propagation;
 - man-made noise;
- b) that AM reception quality is relatively poor compared with FM broadcast or CD quality;
- c) that new digital techniques have enabled significant improvements in reception quality to be obtained in other broadcasting bands;
- d) that the introduction of digital modulation systems in the broadcasting bands below 30 MHz has been shown to be feasible by using low bit-rate coding;
- e) that Resolution 517 (Rev.WRC-97) invites the ITU-R to continue its studies on digital techniques in HF broadcasting as a matter of urgency,

recognizing

- a) that the implementation of an ITU recommended single worldwide standard for any digital sound broadcasting emission at frequencies below 30 MHz would be extremely beneficial, particularly for developing countries, since it allows for:
 - a single common receiver for all the broadcasting bands below 30 MHz, as it is presently the case for analogue emissions;
 - mass scale production resulting in receivers as economical as possible;
 - more economical analogue to digital conversion of existing transmitting infrastructures;
- b) that the World Broadcasting Union (WBU) at the meeting of its Inter-Union Technical Committee (April 1998) has expressed its support to the ITU-R activities leading to the adoption of single worldwide standards for broadcasting;
- c) that the adoption of a single worldwide standard would greatly contribute to enhance the pre-eminent role of the ITU in telecommunication as foreseen in Art. 11 of the ITU Convention (CV 159),

decides that the following Question should be studied

- 1** What single common digital sound broadcasting system can be recommended for use in the LF, MF and HF bands, to improve spectrum efficiency and reception quality for national and international coverage?

- 2 What type of digital coding and modulation schemes are implemented in the above mentioned system to maintain compatibility with existing planning of the LF, MF and HF broadcasting bands?
- 3 What service enhancement is provided by the above mentioned digital sound broadcasting system compared with existing AM broadcasting?
- 4 How can the above mentioned digital modulation system be implemented with existing transmitting equipment?
- 5 What kind of new services, if any, can be introduced in the AM broadcasting bands using the above mentioned digital sound broadcasting systems?
- 6 What is the complexity of the dual standard receivers able to receive transmissions using digital modulation and AM systems?

NOTE 1 – See Recommendations ITU-R BS.1348 and ITU-R BS.1349,

further decides

- 1 that the results of the above studies should lead to the formulation of an appropriate Recommendation by 2006;
 - 2 that administrations be invited to provide relevant contributions.
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